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ON account of the superabundance of work on the part of the editorial staff, this issue of the AGRICULTURAL STUDENT is somewhat delayed. We hope your patience will be rewarded, perchance, by the strength of the issue.

The action on part of some one or more students in their attempted roast of some members of the faculty was cowardly and ungentlemanly. The entire student body should discountenance and treat with contempt any such assault. There is but one way for procedure in such matters and that is the honorable way. The sneaking underhanded method of placing up posters is disgusting and despicable. Let the students look at this paltry trick with contempt, and the authors will be wise enough not to repeat it and the University will be none the worse off.

It is an unhappy occurrence to the AGRICULTURAL STUDENT that F. P. Stump should resign as business manager. It was greatly due to his untiring efforts that the journal has been started on its recent solid basis. The associations of the board of editors from the beginning have been very pleasant, and no person will feel the loss of his retirement as business manager more than the board of editors. We have not lost him altogether, he agreeing to remain with us in the capacity as alumni editor. As for the present management we will do our best to keep the paper up to the standard that we have set for it, and will continue to furnish the best readable matter obtainable, and further, in way of advertisements, we will furnish readers information only from the best firms in existence.

It is a pleasant change when now and then the wierd, monotonous whine of the political pessimist is interrupted by the voice of the people in favor of righteous rulers and pure politics. Again and again have the people demonstrated their ability to rule, and have shown they can lay aside party affiliations and elect a man that is pure and honest, and free from political entanglements and intrigue.

In view of the fact that it will soon again be the duty of the people of Ohio to select another governor, why should not the farmers, who are in majority, demand a man who will in a degree, at least, represent them? It is time for the farmers to wake up and to realize that if they want help they must work for it themselves. There are many able and honest farmers, well informed and educated in matters of state that would be a credit and a pride to the State of Ohio, to serve her as governor. Let the farmers unite in support of a man who will represent them, and his election will be as unquestionable as his nomination.

MORE than once we have said the AGRICULTURAL STUDENT is here to do good and to assist in the education of the American farmer. We shall continue to sound the same note, for that is what we are here for.

Man, in his fall, has been doomed to labor for his very existence. He recognized then—that first day—as now, that agriculture would be the foundation and promoter of all industry.

Great has been the evolution of agriculture, and though the farmer has changed much, has he kept pace with his occupation?

Is the farmer to-day ready to solve the numerous problems that confront him and that are now demanding immediate attention? It requires research and study to solve these problems, and for want of these the questions remain unsolved.

The time has come when the farmer must be broadly educated, to the extent that he can come in touch with the world—to think and act as a part of it. He must be able to cope with every phase of humanity. When thus developed, he will sound the death knell of the politician, for then there will be no need of a one-sided man to tell the farmer how to vote; and he can then study the issues of the day from a scientific standpoint and vote intelligently. Let the farmer educate himself and start on his life's work thoroughly prepared, and he will be able to battle with the world for a livelihood, and not only be a man among men, but from the nature of his occupation, a man above many men. Then will he be prosperous and enjoy life to the utmost.

OHIO leads! Ohio must lead! For some years she lagged perceptibly as to her school of agriculture. To-day in this matter she is fairly in the forefront. But she must on, not only for the purpose of fulfilling her mission as the born leader of States, but because in this matter she owes through her school of agriculture a great duty to her soil-tillers. The chain of undertakings,

which, being successful, as they must be, are to place us far in the van, began over four years ago, when the STUDENTS of the school organized to rebuild and rejuvenate it from within, first, and then from without. The second link was forged, and a long, strong one it was, too, when the AGRICULTURAL STUDENT was born. The next link needed in this chain is an association bringing together strongly, in active work, the students, ex-students and alumni of the school and the progressive farmers of our State. The now proposed "Ohio Farmers' Co-Experimental Union" will, if organized and pushed vigorously, afford such a link.

Another link which must come soon is the reformation of the agricultural college course and college year, so as to keep, at least the junior and senior students at the university straight through the "farming year," the "growing season," giving them the management of some practical work to do on the farm, putting the growing of crops and conducting of experiments into their hands.

Then agriculture must be taught in township high schools and then in rural common schools. Our agricultural college must be the crown of a complete system instead of a lost hat.

It is entirely too slow a process, this educating one boy or less from each county at a time, and making no provision for the spread of the contagion beyond him. The little leaven must be brought into more immediate contact and into contact at vastly more points of the lump if it is to very speedily leaven the whole. There are other links, small and great, intervening and extending, of which we will not now speak.

The forging of the ones above mentioned as coming next in succession, will afford abundant exercise for some time to come. Let these be considered judiciously and carefully, and we will have no reason to doubt the success of the undertakings. Turn on the blast now, and when the iron is hot, strike!

The students in Agriculture have recently enjoyed several interesting and instructive lectures given by Professors Milton Whitney of the Department of Agriculture, Washington, D. C., and Charles S. Plumb, Professor of Agriculture, Purdue University. Professor Whitney opened the eyes of some of the students in his lectures on the Physical Structure of Soils and the Relation of Soils to Crops. None the less interesting were Professor Plumb's lectures on the Evolution of the Dairy Cow and an Udder Study. The lectures were especially helpful and profitable to the Seniors, inasmuch as two of them are working their theses on the physical structure of soils while another is making a special thesis study on the effect of food on milk. Such entertaining and suggestive lectures are always welcome.

We wish to call especial attention to the new advertisement of Mr. H. W. Treat, of Tallmadge, Ohio. A new but well and favorably known breeder of Red Polled cattle and Shropshire sheep.

Mr. Treat took the short course in agriculture at O. S. U., entering here the autumn of 1887.

His herd of cattle are of the very best obtainable in England or America, and are prize winners.

In the way of sheep, Mr. Treat has nothing but the best, the prize-winner, Cyrus No. 19,166, weight, 325 pounds, heading his flock.

Mr. Treat writes: "I am heartily in favor of your proposal to form an Ohio Farmers' Co-Experimental Union. Am sure I would derive great benefit from belonging to such an association, and would be glad to do what I can to assist in the work."

This is the first ex-student heard from on the subject of "the Union," and if we are to judge by his enthusiastic and willing support, there need be no fear that plenty of material is not at hand for the work.

The committee appointed by the Agricultural Student's Association is

investigating the matter and will soon report. THE AGRICULTURAL STUDENT is firmly of the belief that just now there is no other movement we can make which promises so ready and valuable returns, in many ways, to those who actively engage in the work, to the University, and especially to the farmers of our State.

THE second winter meeting of the Ohio State Horticultural Society was held in Toledo February 20th and 21st. One interesting feature of the meeting was the report on the prospective condition of fruit throughout the State. It may be said that, despite the exceptionally severe winter, the fruit prospects for 1895 appear more favorable than for several years past. In the great peach belt of Northern Ohio, where the cultivation of the peach overshadows every other interest, the outlook is first-class; while in the central and western portions of the State the crop is generally killed. The prospects for a good small fruit crop are excellent, and the condition of the apple orchards was generally thought to be an improvement over the past few years. The most unfavorable report came from Lawrence county, where the orchards are said to be in bad condition.

The large attendance, the variety and excellence of the papers and discussions, clearly demonstrated the wisdom of holding a supplementary meeting.

It is more than probable that auxiliary meetings of this society will be held in various parts of the State during the coming winters.

The success attending the management of the forcing houses of the Horticultural Department has stimulated considerable activity in this line of horticulture. No less than half a dozen vegetable greenhouses have been built in Columbus during the past year. Most of these are for commercial purposes, although a few have been erected by amateur horticulturists.

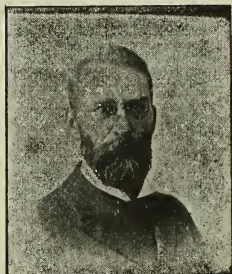
A small greenhouse attached to a

dwelling and heated by the furnace or heater that warms the house, is of comparatively little expense or care, and can scarcely fail to be a source of equal pleasure and profit.

In addition to the beautiful flowers and delicious vegetables that can be grown therein, it affords a most excellent play-room for children.

David S. Kellicott, Ph. D., Professor of Zoology and Entomology in the Ohio State University,

Was born in Central New York, of Scotch-Irish parentage. His early life was passed on a rugged farm, in Oswego county, until preparation for



college commenced at Mexico Academy, Mexico, N. Y., in August, 1862. He entered Genesee College (now Syracuse University) in 1865, and graduated in science with his class in 1869. After teaching for some time he completed an additional year of work in language and history, and received the degree of B. Ph. from Syracuse in 1874; eight years later on completing a prescribed course and a series of independent investigations in zoology, the degree of Ph. D. was conferred upon him by the same university. Since graduation he has taught continuously in the Keystone State Normal School, the Buffalo State Normal and Training School, and since 1888 in the Ohio State University.

Professor Kellicott is a Fellow of the American Society for the Advancement of Science and the Royal Microscopical Society of London, a member of the American Microscopical Society and the Ohio Academy of Science, of which he is President.

His publications consist of numerous scientific papers, mostly relating to protozoa, rotifera, Crustaceous parasites of fishes and insects. These articles have appeared in the proceedings of the American Microscopical Society, Canadian Entomologist, Bulletins of the Societies of Natural Science of Buffalo, N. Y., and Cincinnati Entomologica Americana, etc.

Professor Kellicott, in addition to his university work, is actively engaged in collecting and studying the fishes of the State and also of certain groups of insects. He is especially interested in insects injurious to forest trees.

From Columbus to Cleveland.

There is no place like a railroad train for observing people. Character is plainly shown, occupation can generally be quite accurately determined, and much amusement can be had at the expense of others, by studying the manners and ways of one's traveling companions. Here the observing man has much within the car to see, but the ever varying field without the car is just as interesting. On the 19th of December, I went from Columbus to Cleveland via the Big Four and amused myself by observing the farms along the way, their development, mode of farming, and through these observed facts I could easily determine the character of the farmer and the progressiveness of the community. The Fall had been very open. For quite a few weeks there had been but few days too severe for work in the fields. Yet there were many corn fields in which the shocks stood, still unhusked, though the fields had been sown to wheat, and undoubtedly forty bushels per acre is the yield expected next harvest. In a great many more such fields the corn had been husked, yet the stalks were still in the fields.

The thermometer had been hovering about the freezing point, occasionally going 8° or 10° below it. I know I enjoyed my overcoat, yet I noticed a great many cows were picking their liv-

ing from the frost bitten herbage of pasture and meadow. Imagine what a beautiful flow of rich milk these cows would give after browsing all day on the protected side of a rail fence, and sleeping under the leeward side of a straw stack on a breezy December day! Think how the farmer would rejoice after the milking was done! He would see visions of rapidly improving times and of the final departure of agricultural depression.

It seems to me that such observations from the car window, as you travel through any stretch of country, explains, in a large measure, the exceedingly low average yields of the farm crops. For instance, the average yield of wheat is twelve bushels per acre. A good yield is twice that amount, and a much larger yield is possible. After examining the crop statistics you must not expect to see developed agriculture wherever you travel.

Yet much that was encouraging was seen. There were good farms with protected yards, and wheat fields that were well started on the way to forty bushels per acre. Tile were seen scattered across many a field, indicating the work about to be done and many such signs of progressiveness were noticed. W.

Celery.

HOW TO CARE FOR AND HANDLE THE CROP.

This delicious and well known garden product has been developed from a rank marsh plant. In its wild state as well as in domestication, there are two kinds, the white and the red. The plant is a biennial. It is a crop of vast importance, and some points in its cultivation may be of interest to our readers.

The better plan is to grow your own plants, as those sold by most growers are of an inferior quality and good results cannot be had of them. The seed is generally sown (in the open ground) in rich, well-pulverized soil, as early in the spring as the weather permits. Or, better, it may be sown in the forcing-house or hot-bed. Keep

the bed free of weeds until the time to set out the crop, which is done between June 15 and the middle of August. In this locality the plants are set out on a level with the ground, or a few inches below it. In our garden the plants are set in beds, which are made in the following manner: Throw out the soil on each side, thus making a trench a few inches in depth and about five feet wide. Then partly fill this trench with fine compost, thus making the depth of the trench about three inches. In these beds the celery is set in five rows, the rows about one foot apart, and the plants about eight inches apart in the rows. When this method is used the crop may be watered easily and is more easily taken care of. At the time of transplanting both the tips and roots of the plants are trimmed. The earth is pressed firmly about the roots. Keep the ground mellow and free of weeds until the first banking or handling, in which operation some hold tops with one hand and draw the earth up around the plants, while others go over the bed and wrap twine around the plants, and bank it up afterward. In the last named method paper string is used, which, as it soon rots off, does not interfere with the growth of the plant. To facilitate the operation of banking run a cultivator along each side of the bed, and the earth is then ready to shovel around the plants. After the last banking only the tips of the leaves should remain out of the ground. When the time comes to dig the plants insert a spade under the roots and pry with one hand, pulling the plant out with the other. To prepare the plants for market, trim off the outer leaves, exposing the white interior as much as possible. The root is trimmed off with a few regular cuts, and then the plants are washed and placed in neat bundles of one-half dozen or more plants each.

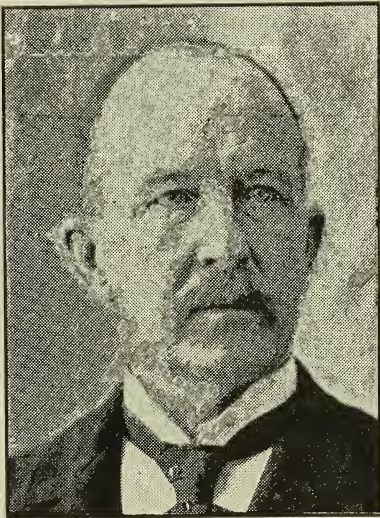
Some store the crop in trenches and others in cold storage cellars, but in our gardens the celery is left where it grows until sold. In the late fall the plants are banked up to the top

and covered with earth and coarse manure and straw.

For home use a few hundred plants may be stored as follows: Dig the plants and place them in boxes in the bottom of which has been placed a few inches of good soil. Place this earth about the roots, (or pack damp moss around them) and place the boxes in the cellar. Another way is to make a sort of a bed in the cellar and set the plants in it. Keep the roots moist to avoid wilting, and the foliage dry to avoid rotting. Celery may be kept in this manner during the greater part of the winter and in a good condition. Always take up the plants on a dry day and never store frozen plants.

WELLS W. MILLER.

**Secretary of the State Board of
Agriculture.**



Wells W. Miller was born in Enfield Center, N. Y., February 20, 1842. In the spring of 1852, at the age of ten years, he removed with his parents to a farm near Castalia, Erie County, Ohio. He worked on his father's farm, attending district schools, select school, high school at Sandusky, and for three years taught a district school

four or five months each winter and spent the rest of the school year in college at Oberlin. He was thus engaged in 1861, at the breaking out of the war, when he enlisted under the President's first call for 75,000 men, on April 20th, in Company E, 8th Regt. O. V. I., to serve three months. He received the appointment of sergeant very shortly after his enlistment.

In June, 1861, the 8th O. V. I. was reorganized and mustered into the United States' service as a three years' regiment, and Sergeant Miller was made first lieutenant of his company. In February, 1862, he was assigned to the command of Company H of his regiment, and a month later he received his commission as its captain. He served with his regiment through all the marches, campaigns and battles from July, 1861, to July 1862, in West Virginia, as a part of the famous Kimball Brigade of Shields' Division, when, with his regiment he joined the Army of the Potomac, and was assigned to what was afterwards known as Carroll's Brigade of the Third Division of the Second Army Corps, and shared the fortunes and misfortunes of this army through its various campaigns, except such time as he was a prisoner of war and disabled from service by reason of wounds received in action.

On November 5, 1862, on the march from Harper's Ferry to Falmouth, Va., he was left at Snickersville on account of severe illness, and the next day was captured by the rebels, together with several hundred other men more or less disabled by sickness. He was unable to be moved, and fortunately for him, he was paroled (being the only one), all the others being sent to Libby prison. After recovering sufficiently to return to the union lines, Captain Miller reported to Gen'l. Sangster, in command of Camp Parole, at Annapolis, Md., where he was assigned command of all the prisoners of war kept in said camp belonging to regiments west of Pennsylvania. In June, 1863, he was formally exchanged

and returned to his regiment in time to participate in the march to and battle of Gettysburg, where he was dangerously wounded. He was completely prostrated for months, and it was a year before his wounds healed. He was unable to perform any active field service after this, but remained in the army until 1865, doing military duty at various places on detached service.

In March, 1865, he resigned his commission to engage in mercantile pursuits, and was in business in Iowa, and New York City, from 1865 to 1870, when he purchased the farm near Castalia which he still owns and occupies.

In July, 1864, Captain Miller received leave of absence to return home, and on July 4th was married to Miss Mary Caswell, a daughter of Calvin Caswell, Esq., of Castalia. Two children, a daughter and a son, have blessed this union.

On returning to Ohio he again entered the school-room and taught the Margaretta High School at Castalia for four years, during three years of which he served as county school examiner. After this he served six years as county commissioner, twelve years as secretary of the Erie County Farmers' Insurance Co., one year as a member of the executive committee of the Ohio State Grange, six years as secretary of the Ohio State Grange, and he is now, and has been for the past three years, treasurer of the same. For the last eight years he has been assistant secretary of the National Grange during its annual sessions, keeping its minutes and making the journals of its proceedings. For the past three years he has also served as a member of board of managers of the Ohio Penitentiary, resigning that position to accept the position of Secretary of the Ohio State Board of Agriculture, to which he was elected in January, 1895, and of which body he has been a member for the last six years—three years as a member in charge of departments, two years as treasurer and one year as president.

Dairying! not Soon to be Overdone.

One hears it urged on every hand just now that the dairy business will soon be overdone. We are told that soon the prices of butter and cheese will go the way of wheat prices. The chief arguments advanced to support this view are that so many people are going into the dairy business and that dairy knowledge is being so rapidly and efficiently disseminated that much more and great deal better product will be made, hence the demand must per-force soon be over-supplied. But let us see. There are just so many dairy cows in the United States today, five hundred men go into the dairy business with twenty cows each. How many more cows are there as a result of the action of these men? Where do they get these 10,000 cows? We all know they buy them of their neighbors and that no increase in the total number of cows in the country results from their action.

Then you say these *new* men are students and will feed, care for and breed their cows to better advantage, hence will get more product per cow; also the next generation of *their* cows will be better than if these new men had not taken up the work. Yes, true, but so certainly as your statement is true they will use the Babcock Test and many cows, will be immediately condemned to the butchers shambles, that might otherwise have gone on for years producing butter and cheese—at a loss, true enough to supply the market and that too with a product of a quality tending to cripple rather than stimulate demand. The few good cows left, it is true or should be true, give per cow a much greater yield—and consequently profit to the owner—but the product is of such quality as to stimulate demand. The net result is to decrease the total product, increase net returns to producer and stimulate demand, especially demand for something better than oleomargarine which today *when sold for what it is* ranks in price far above the bulk of country butter.

It is plain that the larger the proportion of real butter and cheese which rank far above oleomargarine and filled cheese and the less the proportion of the total of these genuine products which rank below these counterfeits, the lower in the scale of the whole must the counterfeit sink, until when all of the genuine ranks in every respect above the counterfeit the oleomargarine and filled cheese will take their places at the bottom from which rank they will be bought *if at all* as refuse, for, almost no American will buy for use on his table dairy products from the *bottom* of the scale. The one and almost the only excuse given by intentional consumers of these counterfeits is that the counterfeits are *much better* than the greater per cent. of the genuine articles at their command. They do not want articles from the bottom of the scale and there is not sufficient genuine product above the counterfeit to supply the demand.

Then the Babcock Test will go on for years weeding out the present and succeeding generations of cows, leaving fewer cows and less *aggregate* and an increasingly better quality of product, and an increasingly stimulated demand, for it is largely the palate and relatively less the pocket book of the consumer that determines the demand for dairy products. It is very doubtful if under high tension feeding, with resulting shorter lived cows and fewer progeny, one half of which must be males, in connection with the weeding necessary to exclude all unprofitable individuals. I do not think, then, that it is a question for us now, or for many years to come, to consider what will take the place of the dairy industry when it is overdone. If the dairy cow population can keep pace in the next twenty-five years with the human population with its increased appetite for good dairy products, to say nothing of the vast field now occupied by counterfeits which must at all hazards in the interest of moral and physical health, be captured for legitimate use.

F. P. STUMP.

TRY...



For Your Next Suit.

Care of Brood Sows.

The time is nearing when the early March pigs will begin to come. The farmer should begin to prepare for them now and not wait until the day or two before the sows commence to pig. This is a mistake many farmers make in raising pigs. The hog is an animal that is capable of reproducing with remarkable rapidity, owing to the fact that they have large litters; but the way they are cared for in this country, they do not produce to their full capacity. I do not think that the sows average to raise more than three pigs each. Some farmers keep from six to ten brood sows and raise a dozen pigs. They might as well raise from six to eight apiece as to raise one if they have care in most cases. The sows would breed large litters, but the pigs would be killed from want of care they receive.

There are several ways the pigs are killed when young. If the pens are not properly arranged, the mother will lay on them. She may eat them or the pigs may starve for the want of milk.

The last two ways are usually caused by improper feeding. I have heard of sows that would eat their pigs, no difference how they were fed, but never knew of a sow eating her pigs if she was satisfied with her nest and had everything she wished to eat. I never saw but one sow that ate her pigs. The man that owned her sold her because she had that habit. The man that bought her kept her for a brood sow and fed her as he fed his other

pigs and she never ate any more pigs. There may be plenty of them, but I never saw one that would eat her pigs if fed as nature would feed her.

It is best to commence to prepare for the pigs now, as everything will be in the best way for them when they come. Do not keep the sows penned up in a small barren lot and feed nothing but dry corn. Give them a variety of food. Think how you like to live on a single diet, when feeding any kind of animals. In order for the brood sow to have strong healthy pigs she must have proper food to feed them with. There are not the food elements in corn to make it a complete ration for a brood sow or is there in any one kind of food alone.

If there is a wood lot that the sows can run in every day or only once a week, it will be better than nothing. It is the nature of the hog to get what it wants if in its power. The owner should feed a mixture of foods to his sows that will make good strong healthy sows, and have a good warm place well cared for and ventilated, there will be no danger, but that the pigs will be strong and healthy. Most farmers have small potatoes which they cull from the crop when they are gathered. It is a good plan to keep them and cook them for the sows in the winter time when there is snow on the ground. Potatoes have a large per cent. of potash which is an element of food for the growth of pigs. Wheat bran is also a food that should be given. There should be given as large a variety of food as can be obtained without too much expense.

When it comes near time for the sows to commence to pig, they should not be let run together up to the time, but should be put in separate pens at least one week before time, and better more

so that the sows may get accustomed to their pens and being alone before the pigs come. They will not be so likely to worry and run over the pigs, but will remain quiet as they should.

If farmers look at this matter of raising pigs as they should and heed the advice of others who confess their mistakes, they could avoid these mistakes and receive a profit where otherwise they would find a failure.

Lessons From the University Farm.

Farmers frequently sow rye in standing corn for the sole purpose of getting the soil covered with a vegetable growth, before Winter sets in, so that much of the waste of fertility from surface washing may be prevented. Last Fall a corn field on the University farm was sown to rye, part of it while the corn was still standing, and part after the corn was removed. But there were reasons for sowing the rye besides the one named above, and tests of the utility of the practice are to be made.

This particular corn field has been badly infested with bindweed. Last Spring it was decided that the bindweeds must go. The field was carefully cultivated during Spring and Summer, not a weed being given as much as a chance for life. Now one of the great objects of sowing the rye is to keep these weeds back in the Spring until cultivation begins.

The rye was sown about the middle of September. Several weeks of growing Fall weather covered the field with a pretty growth. The idea was conceived that the rye would utilize every hour and minute of growing weather during Fall and Spring, and then would serve two purposes—that of keeping down the weeds in the Spring and also would serve for soiling purposes before time for plowing for corn.

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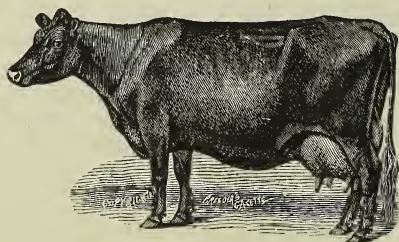
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